

## **AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of the claims in the application.

### **Listing of Claims:**

1. (Currently Amended) A digital microphone comprising:  
a microphone housing (2) having a sound inlet (3) and comprising:
  - a transducer element (4) comprising a displaceable diaphragm and adapted to generate a transducer signal representative of sound received through the sound inlet (3),
  - an analog-to-digital converter (40) comprising a multi-level quantizer operatively coupled to the transducer element means to convert the transducer signal into multi-bit samples representative of the transducer signal,
  - a digital signal converter (50) adapted to convert the multi-bit samples into a an unformatted single-bit output signal, and
  - an externally accessible terminal (60) adapted to provide the unformatted single-bit output signal.
2. (Currently Amended) A digital microphone according to claim 1, wherein the analog-to-digital converter (40) comprises an oversampled delta-sigma modulator.
3. (Currently Amended) A digital microphone according to ~~any of claim 1 3 or 2~~, comprising an integral clock generator operatively coupled to the analog-to-digital converter (40) and the digital signal converter (50).
4. (Currently Amended) A digital microphone according to ~~any of claims 1-3~~, claim 1, wherein the microphone housing (2) comprises a second externally accessible terminal (61) for receipt of an external clock signal.

5. (Currently Amended) A digital microphone according to claim 4, comprising DC voltage generating means disposed within the microphone housing (2) and operatively coupled to the external clock signal so as to derive a DC voltage supply for operating at least the analog-to-digital converter (40).

6. (Currently Amended) A digital microphone according to ~~any of the preceding claims~~ claim 1, wherein the multi-level quantizer (45) of the analog-to-digital converter (40) comprises between 3 and 64 discrete quantization levels.

7. (Currently Amended) A digital microphone according to ~~any of the preceding claims~~ claim 1, wherein the multi-bit samples provided by the analog-to-digital converter (40) are represented in two's complement format.

8. (Currently Amended) A digital microphone according to ~~any of the preceding claims~~ claim 1, wherein multi-bit samples generated by the multi-level quantizer (45) are represented by a set of corresponding symbols, and wherein each symbol comprises a number of one signs which is proportional with a magnitude of the corresponding multi-bit sample.

9. (Currently Amended) A digital microphone according to claim 8, wherein the multi-level quantizer (45) comprises 3 or 5 discrete quantization levels.

10. (Currently Amended) A digital microphone according to claim 8, wherein the multi-level quantizer (45) comprises N discrete quantization levels and each corresponding symbol comprises N-1 bits;

- N being an integer between 3 and 17.

11. (Currently Amended) A digital microphone according to claim 9, ~~any of claims 8-10~~ wherein the digital signal converter (50) comprises a delay circuit in cascade with an integer ratio upsampler.

12. (Currently Amended) A digital microphone according to ~~any of the preceding claims~~ claim 1, comprising a preamplifier (20) interposed between the transducer element (1) and the analog-to-digital converter (40).

13. (Currently Amended) A digital microphone according to ~~any of the preceding claims~~ claim 1, comprising an interpolator (55) operatively coupled between the multi-bit samples provided by the analog-to-digital converter (40) and the digital signal converter (50).

14. (Currently Amended) A portable communication device comprising a digital microphone according to ~~any of the preceding claims~~ claim 1.

15. (Currently Amended) A monolithic integrated circuit for a miniature microphone, comprising

- a preamplifier (20) adapted to provide an amplified transducer signal and comprising an input section couplable to a miniature electret or condenser transducer element (1),
- an analog-to-digital converter (40) comprising a multilevel-quantizer (45) operatively coupled to the amplified transducer signal and adapted to convert the amplified transducer signal into multi-bit samples representative of the amplified transducer signal,
- a digital signal converter (50) adapted to convert the multi-bit samples into a an unformatted single-bit output signal, and
- an integrated circuit pad adapted to provide the single-bit output signal.

16. (Currently Amended) A monolithic integrated circuit according to claim 15, wherein multi-bit samples generated by the multi-level quantizer (45) are represented by a set of corresponding symbols, and wherein each symbol comprises a number of one signs which is proportional with a magnitude of the corresponding multi-bit sample.

17. (Currently Amended) A digital microphone according to ~~claim 15 or 16~~, claim 15, wherein the analog-to-digital converter (40) comprises an oversampled delta-sigma modulator.

18. (Currently Amended) A monolithic integrated circuit according to ~~any of claims 15—17~~ claim 15, wherein the multi-level quantizer (45) of the analog-to-digital converter (40) comprises 3 or 5 discrete quantization levels.

Please add new claim 19.

19. (New) A digital microphone according to claim 1, wherein the digital signal converter is a sigma-delta signal converter.